

# The History of Zoological Collections in Trinidad and Tobago\*

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## ABSTRACT

This history of collections of zoological specimens for museum and study purposes is presented in three periods: 1800 to 1899, 1900 to 1949, and 1950 to 2000. The history shows that most of the significant collections were made by local residents and are now located abroad. The most collected and studied groups are the birds, mammals, reptiles, amphibians, fishes, butterflies, moths and other insects of medical, veterinary and agricultural importance. Preserved specimens of our fauna in local institutions are now so considerable that a national data base should be considered.

## INTRODUCTION

The 1800's saw heightened worldwide activity in biological explorations. This interest, no doubt, was fuelled by reports from sailors and others of unique and beautiful animals in other countries. Charles Darwin on his voyage on HMS Beagle (1831-1836) was one of the early biological explorers and collectors (Darwin 1845). Others who also came to the New World were Alfred Russel Wallace and Henry W. Bates, both of whom sailed up the Amazon River in 1848 (Bates 1864). Wallace returned to England four years later but Bates remained collecting for 11 years. He collected 14,712 species of animals of which some 8,000 proved to be new to science. It was the heyday of the morphological taxonomist. Alas! This is a dying breed of scientist.

Collections are of three basic types: specimens are collected for display, teaching and reference. The first two are self-explanatory. Reference collections however, should carry at least the following minimum information:

1. Date (and sometimes time).
2. Place of collection, as accurately as possible.
3. Collector's name.
4. Identification, if known when the specimen was collected.

In the laboratory or museum, if the specimen was not identified at the time of collection, another label can be added carrying the identification information including the name of the person who made the identification. A field label can also be rewritten, but the original field label must always remain with the specimen. One must always be careful of place names. For example, in many museums today there are specimens labelled simply as originating from "Trinidad". Now there are at least five places named Trinidad, and some specimens now in museums, just do not fit with what is known of the fauna of our island. There are other problems as well. In the late 19<sup>th</sup> century, many colourful bird specimens were collected from South America, sent to Trinidad and then transhipped to Europe for the millinery trade. Many of these trade skins were labelled "Trinidad" as the country of origin even when they were not from the island, causing great confusion (Chapman 1894).

## 1800-1899

There were not many biological expeditions to Trinidad and

Tobago in this period. Ledru visited in 1810 (cited in Thomas 1893) and produced a list of ten species of mammals from Trinidad. However, most of the information on our fauna came from local people who were interested in the environment. They collected and sent the occasional specimen to museums in metropolitan countries, particularly towards the end of the 19th century and mainly to the British Museum (Natural History). This is documented in articles found in *The Journal of The Trinidad Field Naturalists' Club* (1892-1896 in two volumes). The first effort in trying to present a list of our fauna came from Joseph (1838). His list was compiled from what he had observed or from anecdotes. There is no evidence to suggest that he knew of Ledru's visit in 1810. Although Joseph's list was useful it was certainly not scientific. Later, the noted English author, Charles Kingsley, visited Trinidad and wrote about the natural history of Trinidad, but he did not collect specimens (Kingsley 1871). However, the first systematic collection of animals by a local person, was made by a physician Dr. Jules Francois Court, who produced a catalogue of snakes which was published in de Verteuil's (1858) handbook of the island. Court presented his collection to the Royal Victoria Institute (RVI), now the National Museum and Art Gallery. The RVI was destroyed in a fire in 1920 and all specimens were lost (Mavrogordato 1977).

Between December 1862 and March 1863, E. C. Taylor visited Trinidad and made a collection of 118 species of birds which were probably deposited in the British Museum (Taylor 1864). At about this time, a local resident, Dr. A. Léotaud, was slowly and patiently collecting birds and studying them. He had developed such a reputation for himself, that his book on "The Birds of Trinidad" written in French (Léotaud 1866) was financed through public subscription. He listed 297 species of birds for Trinidad. His specimens too, were deposited in the RVI and lost in the fire of 1920 (Mavrogordato 1977). And yet another small collection of birds was made by O. Finsch (1873), but Chapman (1894) was uncertain that all the specimens were collected in Trinidad.

Fifty six years after the first collection of mammals by Ledru, Dr. D. Huggins in San Fernando sent several specimens of bats to Professor Peters (cited in Thomas 1893) in London from which Peters (1866) listed nine species. Huggins was the first collector of bats on the island. Also, in 1866, a fish collected by R. J.

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Lechmere Guppy, a geologist, in 1859 was described and named *Girardinus guppyi* after Guppy (Gunther 1866). The fish is now known scientifically as *Poecilia reticulata*, but known world-wide as the guppy.

Occasionally collections of specimens were forwarded to the British Museum and listed by Boulenger in a series of catalogues on reptiles (cited in Murphy 1997; Boos 2001).

Mammals were of special interest to Oldfield Thomas of the British Museum and he was interested in receiving specimens from Trinidad. He received a collection of bats from Henry Caracciolo from which he described a new species and named it *Vampyrops caracciolae* (now *Vampyrodes caraccioloi caraccioloi*) after its collector (Thomas 1889). Later, Thomas (1892) received another collection of bats, this time from J. H. Hart who was then Superintendent of the Botanic Gardens. Among this collection was a new species which he named *Artibeus hartii* (now *Enchistenes hartii*) in honour of Hart. These were the main collections from Trinidad up to 1891.

Caracciolo along with R. R. Mole, Alfred Taitt, W. E. Broadway, F. W. Urich, T. I. Potter, G. W. Hewlett and P. L. Guppy co-founded The Trinidad Field Naturalists' Club in 1891. The formation of this Club gave a big boost to the collecting of biological specimens. Thomas (1893) wrote to Club Members encouraging them to send specimens to the British Museum, particularly as he had earlier described two new species of bats. He stated that "there can be no question that every collection made at the present is sure to contain species new to the island, even if not, as in the case of two of the bats I recently received from the island, altogether new to science". Thomas increased the list of bats from nine to 27 species, including the two new to science. Further, he listed another 25 species of mammals in his paper. And in a footnote in his paper he mentioned that "The Trinidad Field Naturalists' Club has kindly offered to receive and forward specimens intended for the Museum."

By 1894, two members of the Club, R. R. Mole and F. W. Urich had collected enough specimens to make "A preliminary list of the reptiles and batrachians of the island of Trinidad". They listed six species of tortoises (*sic*) 25 species of lizards, 33 species of snakes and 12 species of batrachians (amphibians) (Mole and Urich 1894). In the same paper by Mole and Urich (1894), Boettger described a new species of gecko, *Sphaerodactylus molei* (p. 80) and a new species of amphibian *Hylodes urichi* (p. 88) now known as *Eleutherodactylus urichi*. In 1893 and again in 1894 Frank Chapman of the American Museum of Natural History (AMNH) made zoological expeditions to Trinidad. During his trips he met members of the Club as noted in the remarks while describing the advantages in visiting Trinidad "...and a Naturalists' Field Club whose members, as we know from pleasant experiences, will cordially receive brother naturalists" (Brewster and Chapman 1895). Chapman made extensive collections of birds and mammals. In his first trip he collected 200 mammal specimens which included bats. With J. A. Allen, as senior author they described one new species of bats. In addition, they raised the number of known species of rodents from seven to 19, of which six were described as new (Allen and Chapman 1893). During his second visit in 1894, Chapman collected 323 specimens of mammals. Again with Allen, they added two new species of bats and four new species of rodents including a new species, *Akodon urichi* named after F. W. Urich, Secretary of The Trinidad Field Naturalists' Club. The total mammalian faunal list at that time was given as 65 (Allen and

Chapman 1897).

Chapman, during his first visit, made an extensive collection of birds and listed 151 species. His was a thorough study and brought up to date the taxonomy of Trinidadian birds (Chapman 1894). In a second paper he described a new species of *Synallaxis* (Chapman 1895).

Butterflies are colourful and conspicuous invertebrates and like the birds, people are easily drawn to them. E. L. Joseph (1838) could only say that "the variety and beauty of our Butterflies is extraordinary and dazzling". In 1889, W. E. Broadway sent a collection of butterflies to the British Museum and from these W. F. Kirby described a new species, *Tithorea Flavescens*. The species was quite common in the country and known as "sweet oil." A few years later, Dr. W. M. Crowfoot, prepared a list of 199 species based on collections made by another physician, Dr. Bevan Rake, who was a member of the Publications Committee of The Trinidad Field Naturalists' Club, and the Honourable S. H. Gatty (Crowfoot 1892). During a walk from San Juan to Maraval over "The Saddle" H. F. Wilson collected butterflies and forwarded these to W. F. Kirby of the British Museum. Specimens forwarded included moths collected by Lady Broome, wife of the then governor of Trinidad Sir Napier Broome, at her home in St Ann's. He listed 36 species of butterflies and moths (Wilson 1894). Serious systematic collecting of butterflies, however, started in 1896 by William James Kaye's brother, S. J. Kaye, and C. W. Ellacombe. It should be noted that Ellacombe's collection is now in the Natural History Museum (NHM), London - the labels give St. George's as the collection locality, but Trinidad is not mentioned - a lapse that has caused some confusion in the past. (Matthew Cock, pers. comm.). W. J. Kaye (1904) himself visited in 1898 and collected extensively.

Up until 1897, Tobago was administered separately from Trinidad and consequently collections from Tobago went directly to museums abroad. These collections, made by James Kirk and reported by Jardine (1846, 1847) included birds. Later, in 1883, other collections of birds were made by W. W. Brown and reported by Cory in 1893. A collection made and reported by de Dalmas (1900) was sent to France and according to French (pers. comm.) is virtually "lost." A Mr. Albrecht Seitz made a collection of four snakes and one toad from Tobago and these were reported by Boettger (1894) in our Club's Journal.

#### 1900-1949

Kaye visited and collected again in 1901, and in 1920 at the invitation of Sir Norman Lamont, who had collected butterflies extensively in south Trinidad. Kaye (1921), in his monograph "A Catalogue of the Trinidad Lepidoptera Rhopalocera (Butterflies)," listed 462 species and stated that "At last we can claim to know pretty well what butterflies are to be found in the island". Yet, in 1940 when he reviewed other collections, the most prominent of which were those made by Robert Dick, F. W. Jackson, and A. Hall in the 1920's and 1930's, the list went up to 582 species (Kaye 1940). Matthew Cock (pers. comm.) stated that the Lamont Collection is divided fairly evenly between the University of the West Indies (UWI), St. Augustine and the NHM (Edinburgh). Kaye had a personal collection, but some specimens are in the NHM and some are probably housed at the British Museum. Kaye's personal collection was sold after his death and is now in the Allyn Museum of Entomology, Sarasota, Florida. Cock further noted that Robert Dick's collection is incorporated into the Malcolm Barcant

collection; F. W. Jackson's is divided between the Oxford University Museum, UK, and the NHM, London; Arthur Hall's collection is in the Booth Museum, Brighton, UK, although many specimens are in the NHM.

In addition to butterflies, Kaye also collected moths and listed 242 species (Kaye 1901). F. Birch made an important collection at Caparo in 1904. S. M. Klages also collected many specimens at Caparo, October 1905-March 1906; this material is considerably more extensive, at least for smaller species, than that collected by either Kaye or Lamont. These specimens were incorporated into Lord Rothschild Museum at Tring, UK, and subsequently incorporated into the NHM when the two collections were amalgamated. It would appear that Kaye never saw these collections. Together with Lamont they published a list of 1016 moths (Kaye and Lamont 1927).

The establishment of the Imperial College of Tropical Agriculture (ICTA) was another boost to the collecting of animals in Trinidad and Tobago. Since ICTA was devoted to studies on agriculture in the tropics, many of the animal species collected were insects of agricultural importance. These collections are now housed at UWI, the successor to ICTA. Apart from ICTA, the West Indian Station of the Commonwealth International Institute of Biological Control (CIBC), was established in 1946 at ICTA, and subsequently in its own buildings at Curepe. The staff of this Station made extensive collections of insects, particularly those dealing with biological control notably coccinellid beetles and parasitic flies and wasps. The Commonwealth Agricultural Bureaux International (CABI) Bioscience, the successor to CIBC, now maintains a collection of over 40,000 insect specimens. The majority of these neotropical specimens are from Trinidad.

Between 1900 and 1949, there were a few collections of vertebrates. It would appear that R. J. Lechmere's son, Plantagenet L. Guppy, also became interested in freshwater fish for he made a collection which was the object of a study by Regan (1906) who recorded 41 species of freshwater and brackish water fish. Guppy (1910) produced another list and included three species from Tobago. Under the auspices of the Barber Asphalt Company, a collection of fish was made by L. Wehekind which was reported by Fowler (1931).

The amphibia was collected by Kugler, was studied by J. Roux (1926) who listed 14 species. And one year later Lutz (1927), a Brazilian also collected 14 species. Through extensive collecting by F. W. Ulrich and D. Vesey-Fitzgerald, Parker (1933, 1934) of the British Museum, was able to study and update the list and provided a key to 24 species, one of which was new and was named *Gastrotheca fitzgeraldi* (now *Nototheca fitzgeraldi*) after FitzGerald. Parker's work was the most complete study of the amphibians up to that time.

Although Vesey-Fitzgerald (1936) did not collect bats, he listed 34 species in his paper on "Trinidad Mammals." Around this time too, between 1936 and 1938, I. T. Sanderson made his trip to the Caribbean and collected some mammal specimens from Trinidad and elsewhere in the Caribbean for the British Museum (Natural History). These specimens were studied by Laurie (1953), but nothing new was added to the known mammalian fauna of Trinidad.

Small collections of birds in this period were made by Cherrie (1906, 1908) from the Heights of Aripo. Around this time other collections were made by Andre and Dr. P. Rendall, reported by Hellmayr (1906) while collections by Carriker (1909) went to the

Carnegie Museum. Williams (1922) studied the food and habits of Trinidadian birds and shot some to study their stomach contents. Skins were prepared from some of these birds, but he did not state if he had placed them in a museum. Likewise, Vesey-Fitzgerald (1936) further noted the food habits of birds particularly those found in the cane fields, but again of those he collected he did not state where his specimens were deposited. In 1931, R. Roberts, W. Wedgwood Bowen and George R. Clarke collected 734 bird specimens for the Academy of Natural Sciences in Philadelphia from which 167 species were listed (Roberts 1934). Belcher and Smooker (1934-1937) made important collections of birds' eggs and recorded their studies of nidification in a series of papers.

### 1950-2000

The avifauna, as expected, received a lot of attention in this period. Suddenly, between 1950 and 1956, five individuals interested in the study of birds arrived in Trinidad. In 1950-51 Plowden-Wardlaw collected extensively, swamp and savannah, species for the Peabody Museum at Yale University. Unfortunately, the data on the collections were not published. Then G. F. Mees, from Holland, visited from June 1953 to February 1954 for the sole purpose of collecting bird specimens for the Rijksmuseum in Leiden. He collected 835 specimens representing 178 species from Trinidad and 100 bird specimens from Tobago. These collections as well as specimens from other museums were studied by Junge and formed the basis for a paper by Junge and Mees (1958) titled "The Avifauna of Trinidad and Tobago". They reported 344 species in Trinidad and 144 species in Tobago. They also described a new subspecies (*Pipra erthrocephala flavissima*) and added six new forms to the list of birds of Trinidad and Tobago.

About the same time as Mees, Dr. G. A. C. Herklots arrived in Trinidad to take up an appointment as Principal of the ICTA. He noted that within 100 days he had identified 100 species of birds (Herklots 1961). He eventually wrote a book "The Birds of Trinidad and Tobago", but his descriptions were based on his field notes and from shot birds. However, he did not indicate where he had deposited his specimens, so these are, unfortunately, not available for further study, which is the rationale for depositing specimens in a museum.

In November, 1952, eight months prior to the arrival of Herklots, Dr. Wilbur G. Downs, who was also interested in birds arrived in the country to establish The Trinidad Regional Virus Laboratory (TRVL) and to study insect, tick and mite-transmitted viruses. Many of the viruses were known to have wild vertebrates as hosts, and birds were an important group in this study. By 1955, when the laboratory was running smoothly, he turned his attention to birds. He collected initially, by shooting and then by the use of mist nets. Downs amassed a large collection of bird specimens which is now housed in the museum at The Caribbean Epidemiology Centre (CAREC), successor to the TRVL (Ffrench 1980; Tikasingh 2000). The CAREC bird collection seems to be the only one that is properly housed and maintained and available for reference in Trinidad and Tobago.

Richard Ffrench was the last of the quintet to arrive in Trinidad. He visited in 1956 and then took up residence in 1958 in order to teach English, Latin, History and Music at St. Peter's School, Pointe-a-Pierre. Ffrench studied bird life extensively in the field and with the help of previous studies and examination of the museum specimens at CAREC and abroad, he produced his book

“A Guide to the Birds of Trinidad and Tobago” which was later revised (French 1980). In his second edition (1991) he lists 433 species for Trinidad and Tobago: 411 species from Trinidad and 210 from Tobago, of which some are dubious. Later he produced a checklist of 416 species for Trinidad (French 1996a) and 224 species for Tobago (French 1996b). His book is now standard reference and suggests that the resident avifauna of Trinidad and Tobago is well known. Thus, the chance of seeing a new resident species would be extremely low. Nevertheless, we have the Trinidad and Tobago Rare Bird Committee which receives reports of unusual sightings, analyzes them for credibility and produces occasional reports in the Club's Journal.

The next large collection of vertebrates made during this period was of mammals and this was made by Dr. Downs and his group at TRVL. It seemed that their intention was to catch anything that moved. They also collected some things that did not move, like plants. Their collection of plants, properly mounted and documented, was subsequently donated to the National Herbarium at UWI. From some of the mammals collected, skins were prepared and sent to the AMNH for identifications. The Museum subsequently sent back some of the specimens for reference purposes and included some specimens collected by Chapman in the 1890's. These specimens are now housed at the CAREC Museum. It is interesting to note that although CAREC collected mammals from many parts of Trinidad and from different habitats, they were able to add only one subspecies to Chapman's list.

Here I will give one example as to why it is essential to have well-preserved and documented specimens. While working on Soldado Rock, staff members of TRVL, Thomas H. G. Aitken and Elisha Tikasingh, caught a rat that was tentatively identified as the cane rat, *Zygodontomys brevicauda brevicauda*. The rat did not look like a typical *Z. brevicauda brevicauda* and the specimen was sent to the AMNH where Goodwin compared it with their specimens and concluded that it was a new subspecies. He named it *Z. brevicauda soldadoensis* (Goodwin 1965).

Earlier, Goodwin (1962), described two new subspecies of rodents (the spiny rat *Echimyus armatus handleyi* and the grass mouse *Akodon urichi tobagoensis*) as well as *Zygodontomys brevicauda tobagi* from Tobago.

Although some bats were collected earlier, systematic collecting of this group of mammals did not start until the arrival of Arthur M. Greenhall in 1953. He was appointed Government Zoologist, Curator of the Emperor Valley Zoo, Curator of the RVI and Consultant to TRVL. As zoologist of the bat catching programme in the Government's anti-rabies drive, he visited all parts of Trinidad and Tobago collecting bats. Greenhall (1956) in his preliminary paper on “Bats of Trinidad” listed 52 species. His collection was submitted to the AMNH where G. Goodwin studied the specimens. Goodwin and Greenhall (1961) wrote a comprehensive monograph on the bats of Trinidad and Tobago. They described 58 varieties of bats and they carefully noted the point that 27% “(16) of the 58, were described originally from so small an area as Trinidad” and they went on to state that “With more intensive and improved collecting techniques there will be additional records and possibly new forms, especially among the rarer solitary tree or free-living bats.” One year later, these authors described two new bats in the Genus *Mesophylla* (Goodwin and Greenhall 1962) and later, Carter *et al.* (1981) updated Goodwin and Greenhall's monograph and listed an additional four species.

Voucher specimens from the Goodwin and Greenhall study were returned to TRVL and the Veterinary Public Health Unit. The species count of mammals now stands at 64 bats and 40 other terrestrial species (Goodwin and Greenhall 1961; Goodwin and Greenhall 1962; Alkins 1979; Boos 1986; Tikasingh 1991).

Professor Julian Kenny made an extensive collection of amphibians during the period 1955-1961 and 1963-1965 and reported 25 species in his monograph (1969). His specimens were deposited at the Royal Ontario Museum. More recently, at various times between 1982 and 1994, John Murphy has visited the twin islands and made extensive collections of our herpetofauna. His collections were deposited in the Field Museum of Natural History (Chicago). Murphy (1997) made a thorough study of the group and listed 128 species, of which 36 were amphibian and 45 snake species.

The remaining group of vertebrates studied during this period was the freshwater fishes. Although the guppy became internationally known, it is surprising that a more thorough study of this group was not undertaken until the 1950's. Then, Jack Price (1955) conducted a survey and identified 51 species which included ten new records for Trinidad. Later Walter King-Webster and J. Kenny also conducted surveys of the freshwater fish. These collections were deposited in the Rijksmuseum of Leiden and studied by Boeseman (1960). In addition, Kenny (1995) also studied these collections and listed 46 species in his Memoir which have been described by Phillip and Ramnarine (2001).

With reference to the invertebrates, two groups received extensive attention during this period - the Lepidoptera (butterflies and moths) and arthropods of medical and veterinary importance. Malcolm Barcant started collecting butterflies shortly after Kaye published his monograph in 1921. Eventually, Barcant (1970) listed 605 species in his book which included 229 species of skipper butterflies. Earlier, Robert Dick had died in 1943 and his collection went to his nephew Percy Rodriguez. On Rodriguez's death in 1961, Barcant acquired the collection. Barcant as well as Dick's collections are now owned by Angostura Holdings and held at their Laventille facilities. Then in the early 1980's, Floyd Preston, who was on an attachment at the Faculty of Engineering, U.W.I. made extensive collections of the Lepidoptera. Preston's collections were personal, but he left a selection of duplicates at CABI Bioscience Museum at Curepe. Matthew Cock who was attached to CABI Bioscience, has been studying the Lepidoptera, particularly the skipper butterflies (Hesperiidae) of Trinidad and Tobago since 1981. In a series of articles in “Living World, Journal of the Trinidad and Tobago Field Naturalists' Club”, he listed 272 species for Trinidad and Tobago ( see Cock 2003b for a list of references) based on his own collections or those made by others. Cock has also made a collection of moths. He lists 2,275 species of moths for Trinidad and 259 species recorded in Tobago. He estimates the species of moths to be 3,500 for Trinidad and 640 for Tobago (Cock 2003). Cock's specimens are lodged at CABI Bioscience at Curepe, Natural History Museum (London) and in his personal collection.

Arthropods of medical importance, particularly the diptera received a great deal of attention with the establishment of the TRVL. When malaria was a problem in Trinidad and Tobago, it was quickly learnt that there were 11 species of *Anopheles*. But the rest of the mosquito fauna was practically unknown. It took the staff of TRVL, particularly Dr. T. H. G. Aitken, to painstakingly collect and identify the species of mosquitoes present in the country.

I can report that there are 160 species plus or minus. I say “plus or minus”, because there are some species we collected and have not been able to identify. Aitken, who was the prime collector, merely gave these unknown specimens numbers so that he and his staff were able to work with them. The numbering system for the unknowns reached 28, but some of these have now been identified. Here is a job for a graduate student interested in taxonomy to complete the task.

Staff of TRVL also collected and have a fair idea of the other arthropods of medical and veterinary importance, as some 300 to 400 species have been collected. These collections, including some paratypes (specimens other than the type specimen which were examined by an author when the original description was made and so designated by him) are housed in the CAREC’s museum.

## CONCLUSION

What we can conclude from these historical data is: that for a country as small as Trinidad and Tobago, our fauna may be considered rich and varied; that the vertebrate fauna and certain groups of arthropods are fairly well known; that more taxonomic work is needed for some invertebrate groups; and that we have a fair amount of collected material which is scattered in many institutions.

It should be noted that most of the collected material went to museums in metropolitan countries. Even local scientists sent their specimens to foreign institutions and this was probably due to the fact that the few local institutions which cater for collections are not well funded nor have adequate staff and hence curators have a difficult time in maintaining their collections. In any proposal for a Biodiversity Centre, it is essential that supporting technical staff should be well-trained in the art of collecting, preserving and maintaining specimens.

Prof. Kenny, in an unpublished paper titled “Proposal for a National Information Centre for Biological Diversity”, noted that “our terrestrial fauna is roughly estimated to number something in excess of 10,000, the bulk of this being arthropods, particularly insects and spiders”. He further noted that “the volume of material both in the form of preserved specimens and publications is now so considerable that it is necessary to consider means of putting it into some order, making access more readily available to the planning process, and to determine further needs”. I heartily endorse his view.

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## Appendix

**Significant Collections of Zoological Specimens  
of Trinidad and Tobago  
in Local and Overseas' Museums:  
A Preliminary Listing.**

**Trinidad and Tobago**

(Some of the collections are uneven in form, size and may lack full collecting data).

1. **Angostura Ltd.**, Laventille.  
Butterflies - Malcolm Barcant.
  2. **CAB International Bioscience** (formerly **Commonwealth Institute of Biological Control**), Gordon St., Curepe.  
Insects, mainly include pest species and biological control agents - Collections by staff.  
Termites - J. P. E. C. Darlington.
  3. **Caribbean Epidemiology Centre** (formerly **Trinidad Regional Virus Laboratory**), Federation Park.  
Bird skins.  
Mammal skins and bats preserved in spirits.  
Snakes, lizards, frogs.  
Arthropod specimens of medical and veterinary importance, including the following: scorpions, spiders, bed bugs, assassin reduviid bugs, sucking lice (pediculids), biting lice (mallophagans), black flies (simuliids) *Culicoides* sand flies, *Lutzomyia* sand flies, mosquitoes, horse flies (tabanids), louse flies (hippoboscids), biting bat flies (nycteribiids and streblids), house fly and its allies, stable flies, flesh and blow flies, bot flies, mites including chiggers and nasal mites of birds, ticks, fleas - Collections by staff members, particularly T. H. G. Aitken, W. G. Downs, and E. S. Tikasingh.
  4. **Coast Guard Museum**, Chaguaramas.  
Fish - Collections by staff.  
Marine invertebrates - Collections by staff.
  5. **Fisheries Division, Ministry of Agriculture, Lands and Marine Resources**.  
Marine fishes - Collections by staff.  
Some invertebrate material - Collections by staff.
  6. **Institute of Marine Affairs**, Chaguaramas.  
Marine invertebrates - Collections by staff.
  7. **Pointe-a-Pierre Wildfowl Trust**, Pointe-a-Pierre.  
Molluscs - Peter Perchade.
  8. **University of the West Indies**, Department of Life Sciences, St. Augustine.  
Insects, general - Adamson, and others.  
Aquatic hemiptera, trichoptera and other invertebrate - Mary Alkins-Koo.  
Cirripedes, molluscs, plankton, turtles - Peter Bacon.  
Trinidad fossils - Kennedy.
- Scleractinian corals - Julian Kenny.  
Freshwater fishes - J. L. Price, Webster-King, J., Kenny, D. Phillip.  
Marine fish and invertebrates - MV Oregon.  
Marine invertebrates - MV Discoverer.  
Butterflies and moths - Sir N. Lamont.  
Brachyuran crabs - Stonley.  
Sphingid moths - Stradling and Bennett.  
Freshwater fishes - J. L. Price, Webster-King, J. Kenny.  
Octocorals - D. Ramsaroop.  
Marine molluscs - Texaco collection.  
Caribbean reptiles - G. Underwood.  
Bats - Various collectors and Clarke.  
Reptiles - Various collectors.  
Amphibia - Various collectors.  
Marines fishes - Various collectors.  
Echinodermata - Various collectors.  
Mollusca - Sybil Atteck, Adamson, Bacon, Ash and various collectors.  
Fresh water decapods - W. Rostant.

**Overseas' Museums****Canada**

**Royal Ontario Museum**, Toronto, Canada.  
Amphibians - J. Kenny.

**Germany**

**Berlin**  
Reptiles?  
**Museum der Senckenbergischen Naturforschenden, Frankfurt am Main**  
Reptiles - Albrecht Seitz

**Holland**

**Institute of Taxonomic Zoology, Univ. Amsterdam, Amsterdam.**  
Trichoptera - L. Botosaneanu.  
Rijksmuseum. Leiden.  
Freshwater fishes - J. L. Price, King-Webster, J. Kenny.  
Birds - G. F. Mees.  
**Thiel, Amsterdam**  
Aquatic and semi-aquatic hemiptera - N. Nieser, pers. coll.

**United Kingdom**

**Booth Museum**, Brighton.  
Butterflies and moths - Arthur Hall.  
**Natural History Museum**, London, (formerly **British Museum (Natural History)**), London.  
(There are probably far more specimens of various grouping deposited in this museum than are listed here).

Birds - E. C. Taylor.  
 Reptiles  
 Mammals  
 Butterflies and moths - F. W. Jackson, S. M. Klages,  
 J. H. Hart, H. Caaracciolo, Dr. Rendall, W. J. Kate, F. Birch,  
 Sir N. Lamont, C. L. Withycombe, F. W. Ulrich, F. D. Bennett  
 and others.  
**National Museums, Edinburgh, Glasgow.** (Formerly **Royal  
 Scottish Museum**).  
 Butterflies and moths - Sir N. Lamont, F. W. Jackson and  
 A. Hall.  
**Oxford University Museum, Oxford.**  
 Butterflies, moths - F. W. Jackson, and others.

#### U. S. A.

**Academy of Natural Sciences, Philadelphia.**  
 Birds - R. Roberts.  
 Fishes  
**Allyn Museum of Entomology, Sarasota, Florida.**  
 Butterflies and moths - Kaye's personal coll.  
**American Museum of Natural History, New York.**  
 Termites - A. M. Adamson.  
 Mammals, including bats - F. Chapman.  
 Bats - A. Greenhall.  
 Birds - André, F. Chapman.  
**Brooklyn Museum, New York.**

Birds  
**Carnegie Museum, Pittsburgh.**  
 Birds - Carriker.  
**Field Museum, Chicago.**  
 Frogs, toads, lizards, snakes - J. C. Murphy.  
**Geological Museum, Cornell University, Ithaca.**  
 Ahermatypic corals - J. Kenny.  
**Museum of Comparative Zoology, Cambridge.**  
 Reptiles  
**Museum of Texas Technological University, Lubbock.**  
 Bats - R. J. Baker, C. H. Carter.  
**National Museum of Natural History (Smithsonian Inst.),  
 Washington, D.C.**  
 Mosquitoes - Belkin Collection.  
 Trichoptera - O. Flint.  
**Yale Peabody Museum, New Haven.**  
 Birds - Plowden-Wardlaw.  
**University of Florida, Fort Lauderdale.**  
 Termites - R. H. Scheffrahn.

*Note: This is an incomplete listing of significant collections of  
 Trinidad and Tobago's fauna in museums. In order to improve the  
 list, I welcome comments on it with the possibility that an updated  
 list can be published in a future issue of our Journal.*

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## NATURE NOTE

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### Problems to be Solved in Trinidad and Tobago's Ornithology.

- a. Are there still any quail-doves living on Tobago?
- b. Find a nest of either Gray-rumped or Band-rumped Swift on Trinidad.
- c. What is the status of the Purple Honeycreeper on Tobago?
- d. Keep a look-out (and listen!) for Scarlet-shouldered Parrotlet on Trinidad.
- e. Find out **anything** about Striped Owl on Tobago.
- f. Check for nesting records on Trinidad of Neotropic Cormorant.
- g. Find nests of **any** crane, especially Yellow-breasted or Ash-throated.
- h. Find conclusive evidence of **nesting** Rufous Nightjar or Yellow Warbler on Tobago.
- i. Separate (and record) the calls/songs of the four or five *Myiarchus* flycatchers that occur on Trinidad and Tobago (and Bocas islands).
- j. Survey the bird populations of the summits of El Tucuche and Cerro del Aripo.

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